ADCO SUMMIT

Millington, TN

11-13 May 2004

The Navy Drug Testing Program and The Navy Drug Screening Laboratories

Navy Environmental Health Center
Portsmouth, VA

NAVY DRUG TESTING PROGRAM

Mission and Vision

We ensure scientifically accurate and legally defensible (forensic) drug testing for all Navy & Marine Corps (active duty, recruits, and reserves) and all DoD military applicants. We are recognized as world-class leaders in forensic drug testing, providing quality customer service, and able to meet the ever-changing demands of

NAVY DRUG SCREENING LABORATORIES

- **NAVDRUGLAB Great Lakes:**
  - **4 Officers / 57 Civilians / 10 Temps**
- **NAVDRUGLAB Jacksonville:**
  - **4 Officers / 68 Civilians / 2 Temps**
- **NAVDRUGLAB San Diego:**
  - **4 Officers / 68 Civilians / 2 Temps**

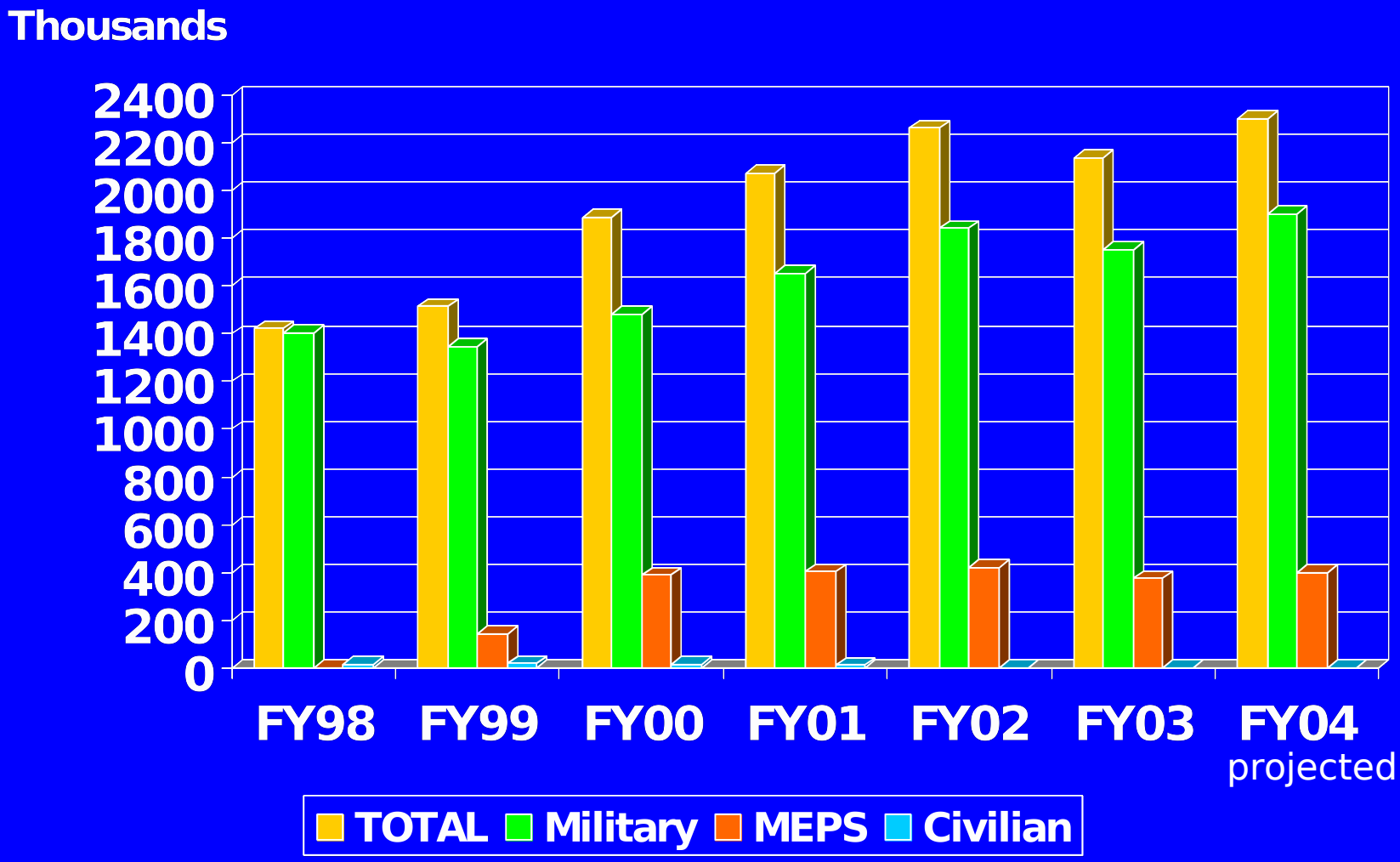
LABORATORY SERVICES

- Conduct urine drug testing
- Provide medical review for investigation of positive results
- Provide legal support (consultation, data packages, affidavits, expert witness testimony)
- Provide laboratory tours
- Conduct general military training
- Develop procedures for improved drug testing
- Conduct prevalence studies to determine

SAMPLE TESTING

- All military samples are tested for:
  THC (marijuana)
  Benzoylecgonine (metabolite of cocaine)
  Amphetamines (amphetamine, methamphetamine, and designer drugs: MDA, MDMA, MDEA)
  6-AM (metabolite of heroin) – 01 May 2004
- 10-50% of military samples are “pulse” tested for:
  OH-LSD (metabolite of LSD)
  PCP
  Barbiturates (butalbital, phenobarbital, secobarbital)

SAMPLE WORKLOAD



TESTING PROCEDURES

- All samples received are screened by <u>immunoassay</u>
  - Immunoassay Screening Test: Allows the laboratory to quickly identify, from a large number of samples (4,000 samples/day), those that do not contain drugs and those that likely contain drugs above the cutoff level. Samples can not be reported positive based on positive results from the immunoassay screening test.
- Samples that test positive on the first immunoassay screening test are tested again by <u>immunoassay</u> for the specific drug class(es) for which they initially screened positive. Samples can not be reported positive based on a positive immunoassay rescreen test.

IMMUNOASSAY SCREENING

TESTING PROCEDURES(cont'd)

- Samples that test positive on both immunoassay tests are analyzed by gas/liquid chromatography-mass spectrometry (G/LC-MS) to confirm the presence and the amount of drug in the sample.
  - GC-MS gives a "fingerprint" of the drug, which is unique to that drug for positive identification.

- A sample must be positive on all three tests to be reported positive by the laboratory.

- Positive samples are retained for 1 year and may be retested upon request by the command.

GC-MS CONFIRMATION

ADMINISTRATIVE CUTOFF

Cutoff Level: The concentration (ng/mL) of drug in urine that serves as an administrative breakpoint for identifying a test result as positive or negative.

- **Analytical Capabilities**
  Example: Instrument Limitations
- **Non-abuse Exposures**
  Example: Passive Inhalation of THC

DOD CUTOFF LEVELS

Drug	Detection Time (days)	IA(ng/mL)	GC-MS(ng/mL)
Marijuana (THC)*	1-5	50	15
Cocaine (BZE)	1-3	150	100
Amphet/Methamp	1-3	500	500
MDA/MDMA/MDEA	1-3	500	500
Codeine	1-3	NA	2000
Morphine	1-3	2000	4000
Heroin	<1	10	10
Barbiturates (B/P/S)	1-5	200	200
PCP	1-3	25	25
LSD	<1	0.5	0.2
O-H-LSD	1-2	NA	1.0
*Frequent use	30		

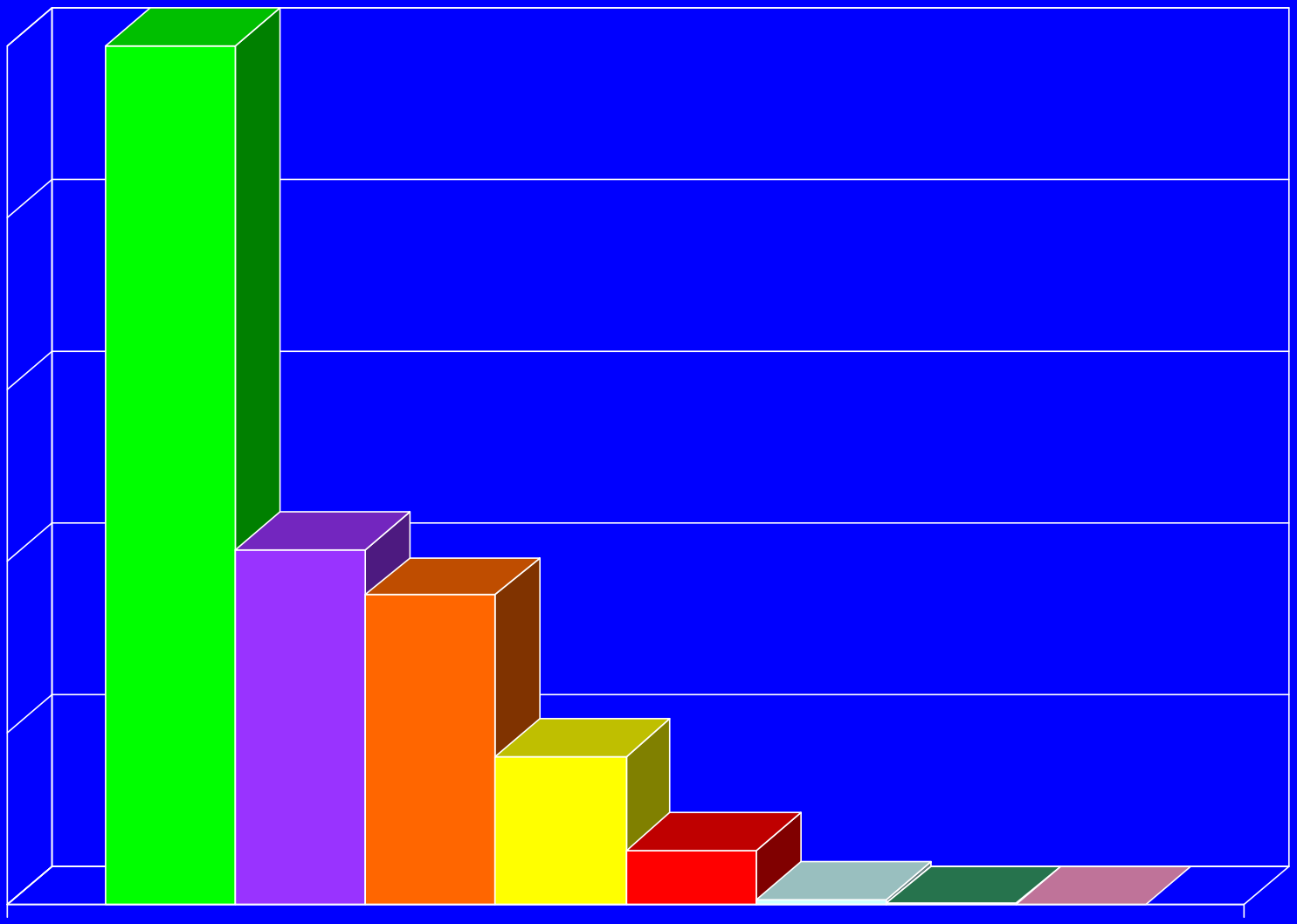
REPORTING RESULTS

- Negative test results are reported within 1-2 days after the sample is received.
- Positive test results are reported within 3-5 days after the sample is received.
- Results are sent electronically to the submitting command via the Defense Messaging System (DMS).

ENSURING ACCURACY and LEGAL DEFENSIBILITY

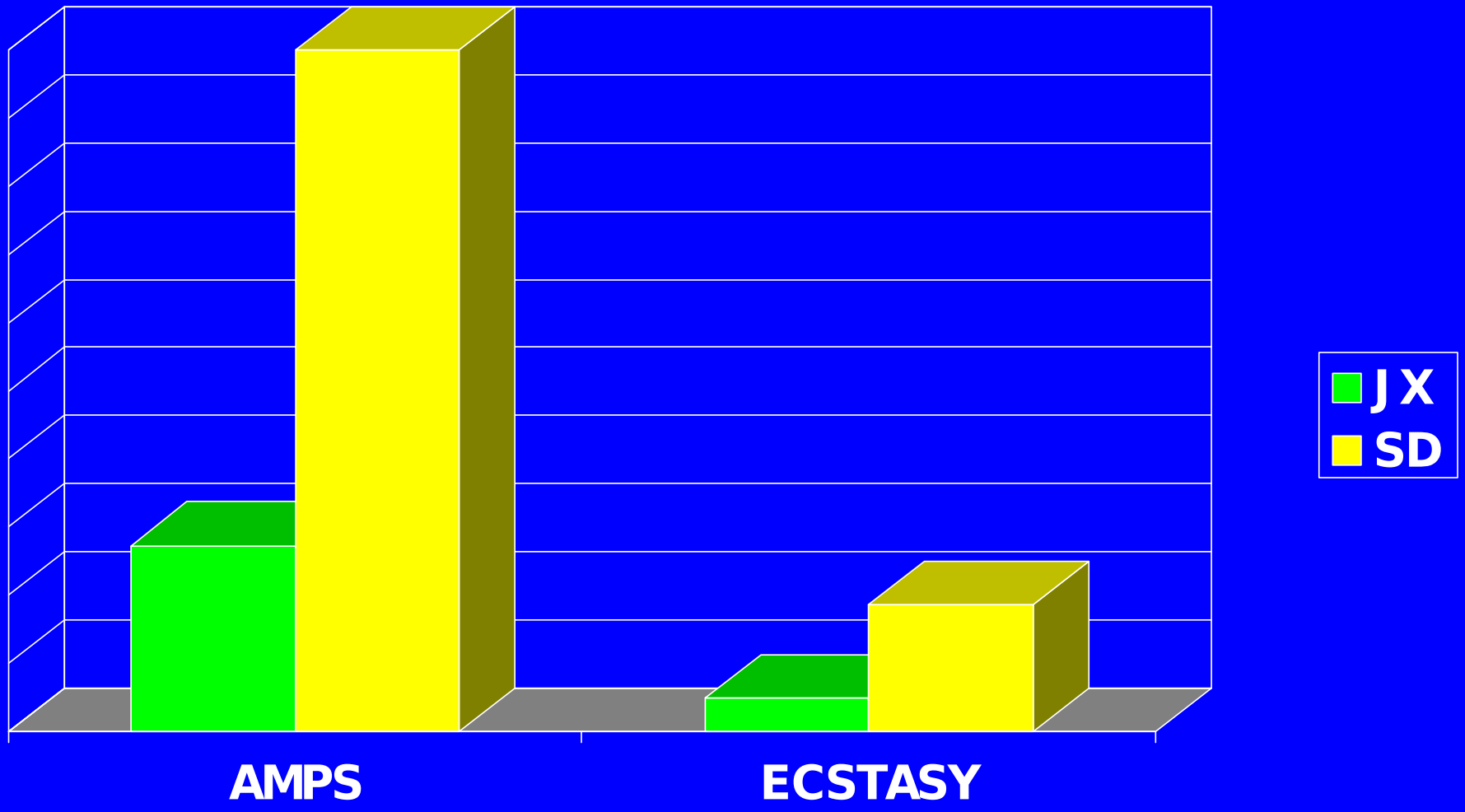
- Internal Quality Control Samples: Prepared by the lab; included in all tests (screening and confirmation).
- External Quality Control Samples: Prepared by AFIP; submitted by commands as member samples.
- Multiple layers of data review.
- Proficiency samples: Submitted each month by AFIP.
- Inspections: 3 per year at each lab (review of SOPs, laboratory practices, data, and reports).
- Internal Audits: Periodic review of data/test results.
- Instrument and Method Validation Procedures.
- Training and Certification Program: All administrative, technical, and review personnel.

NAVY/MC POSITIVES FY04 through MARCH

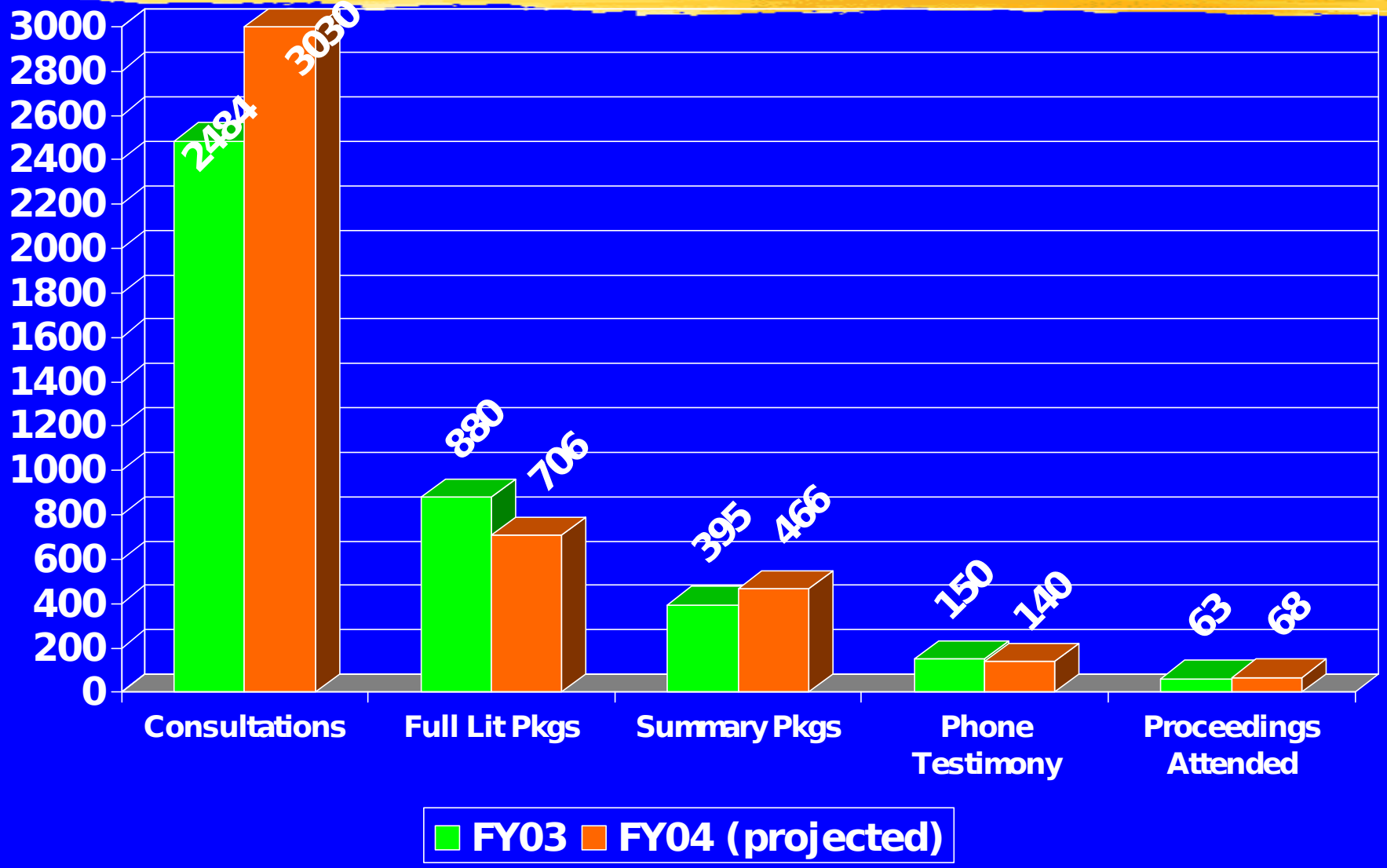


THC
Cocaine
Amp/Met
Barbs
Ecstasy
PCP
Heroin
LSD

AMPS/ECSTASY POSITIVES FY04 through MARCH



FY03/04 LEGAL SUPPORT



WHAT'S NEW?

- OH-LSD Confirmation Procedure
  - increases detection time after use
  - faster/easier analytical procedure
  - implementation April 2004
- Screening Test Specific for Heroin
  - improve capability to detect heroin users
  - implemention May 2004
- Regional Testing
  - improve cost effectiveness of legal support
  - pilot at Tripler Army lab Feb-Jul 2004

WHAT'S NEW? (cont'd)

- **Web-Based Reporting**
  - **eliminates need for sending results via message**
  - **commands can access sample status and test results via the internet**
  - **RTC on-line Nov 2003, some PACFLT units on-line Feb 2004, gradually increasing number of users**
- **New Bottle and Automated Pouring System**
  - **improve forensic integrity**
  - **decrease repetitive motion injuries**
  - **pilot w/RTC at NDSL Great Lakes in FY04**

THE TRUTH ABOUT THE MYTHS

- Passive inhalation of marijuana smoke (under real world conditions) will not cause a positive THC result.
- Taking large amounts of niacin (vitamin B3) will not mask a positive sample result.
- Novocaine, Lidocaine, and Xylocaine will not cause a positive cocaine result.

THE TRUTH ABOUT THE MYTHS

- Vick's inhaler will not cause a positive methamphetamine result because the laboratories distinguish between the different forms (d vice l) of methamphetamine.

- Over the counter cold medications, weight loss products, performance enhancers (i.e., ephedra, ephedrine, pseudoephedrine) will not cause a positive methamphetamine result.

THE TRUTH ABOUT THE MYTHS

- Over-the-counter herbal nutritional supplements (manfactured and sold in the US) will not cause a positive THC result. THC levels in hemp oil products have been significantly reduced through DEA/FDA regulation.
- It is not likely that ingestion of large concentrations of poppy seeds will cause a positive morphine result. (Consult with a Technical Expert at the NDSL.)

WHEN TO TALK TO THE NDSL TECHNICAL EXPERTS

- After checking member's medical/dental records for prescription medication (positive amphetamines and positive barbiturates may be caused by prescription medications)
- To validate/invalidate the credibility of a member's story
  - unknowing ingestion ("someone put something in my drink")
  - innocent ingestion ("I had a poppyseed bagel for breakfast")
  - passive inhalation ("I was at a concert where people were smoking marijuana")

ISSUES IN COURT

- **Direct Observation:**
  - **Adulteration – adding something to the sample that destroys the drug or interferes w/ the test**
  - **Dilution – adding something (i.e., water) to a sample that lowers the drug concentration (also achieved through hydration)**
- **Sample Submission Discrepancies:**
  - **incomplete chain of custody**
  - **missing/mis-matching/incorrect information on the bottle or custody document**
  - **non-forensic corrections**

SPECIAL TESTING

- AFIP - Limited number of samples (no unit sweeps)
  - Ketamine
  - GHB
  - Psilocin
  - Prescription drugs (i.e., Benzodiazepines)
- UCLA –
  - Steroids
  - Must obtain prior authorization from PERS-603

    (www.navdweb.spawar.navy.mil)

COMMON DISCREPANCIES

- non-barcoded DD Form 2624 submitted
- DD Form 2624 submitted on 2 pieces of paper w/out identifiers
- UIC is incorrect
- plain language address (PLAD) is missing or incorrect on DD Form 2624
- specimen listed on DD Form 2624, no bottle received
- bottle leaked in shipment

Reverse Side of DD Form 2624(1)

12. CHAIN OF CUSTODY			
DATE (YYMMDD) a.	RELEASED BY b.	RECEIVED BY c.	PURPOSE OF CHANGE / REMARKS d.
(1) 10JAN2003	SIGNATURE *HM1 J. Doe* NAME HM1 J. DOE	SIGNATURE NAME SECURE LOCKER	WEEKEND STORAGE
(2) 13JAN2003	SIGNATURE NAME SECURE LOCKER	SIGNATURE *HM1 J. Doe* NAME HM1 J. DOE	REMOVE FROM STORAGE
(3) 13JAN2003	SIGNATURE *HM1 J. Doe* NAME	SIGNATURE NAME	MAIL TO NAVDRUGLAB

Reverse Side of DD Form 2624(2)

12. CHAIN OF CUSTODY			
DATE (YYMMDD) a.	RELEASED BY b.	RECEIVED BY c.	PURPOSE OF CHANGE / REMARKS d.
(1) 13JAN2003	SIGNATURE *HM1 J. Doe* NAME HM1 J. DOE	SIGNATURE *YN1 S. Smith* NAME YN1 S. SMITH	TRANSFER CUSTODY
(2) 13JAN2003	SIGNATURE *YN1 S. Smith* NAME YN1 S. SMITH	SIGNATURE *HM1 J. Doe* NAME HM1 J. DOE	TRANSFER CUSTODY
(3) 13JAN2003	SIGNATURE *HM1 J. Doe* NAME HM1 J. DOE	SIGNATURE NAME USPS	MAIL TO NAVDRUGLAB

FORENSIC CORRECTIONS

9876-54-321

CLB

~~**123-45-6789**~~

12May04

9

CLB

123-45-6780

12May04

NDSL GREAT LAKES POINTS OF CONTACT

CO's Secretary: DSN 792, (847) 688-2045, ext 12

FAX (847) 688-5513

Admin Services: (847) 688-2045, ext 10

Expert Witnesses: Dr. Jacob Snyder, ext 13
Dr. Robert Romberg, ext 24
Mr. Charles Kazarian, ext 26

NDSL JACKSONVILLE POINTS OF CONTACT

CO's Secretary: DSN 942, (904) 542-9639

FAX (847) 688-5513

Admin Services: -9632

Expert Witnesses: Mr. Robert Sroka
Mr. Al Marinari
Ms. Judith Driskell

NDSL SAN DIEGO POINTS OF CONTACT

CO's Secretary: **DSN 522, (619) 532-7141**

FAX (619) 532-7337

Admin Services: **-5174**

Expert Witnesses: **Dr. Paul Robandt**
Dr. Jim Callies
Dr. Tony D'Addario

QUESTIONS

(757) 953-0750 / DSN 377

email

(757) 953-0751 / DSN 377

email

Navy Environmental Health Cen

Portsmouth, VA